

## ABSTRACT

[0044] A multi-section filter is provided for use in processing optical signals and other signals that can be readily projected from one filter section to another. Filters of the invention can be configured in numerous forms, including IIR and FIR filters and both linear and 2D active optical lattice filters. Filter sections are coupled together by means of four direction couplers and surface grating couplers, and may be implemented as GSE photonic integrated circuit devices.